

Designer Drugs

Bath Salts

Spice/K2



What are “Designer Drugs?”

- “Designer drugs” are chemicals that have been made specifically or “designed” by underground chemists so that they:
 - (1) are not covered by controlled substance statutes, and
 - (2) still have a psychotropic (stimulant, hallucinogenic, sedative, anxiolytic, etc.) effect very similar to controlled substance that are popular among those persons who recreationally use drugs.



Food and Drug Administration (FDA)

- Designer drugs do not have FDA approval and are produced by underground chemists who have absolutely no interest in, or have no interest in monitoring the quality control of the product.
- Designer drugs are not correctly synthesized and purified.
- Designer drugs contain numerous toxic impurities not separated from the desired active ingredient after the synthesis was completed.



Where do Designer Drugs come from?

- Chemical Research
- Pharmaceutical Companies
- Independent Chemists who love drugs
- “Basement Chemists”
- Made/imported from China and India then “assembled” and marketed in U.S.



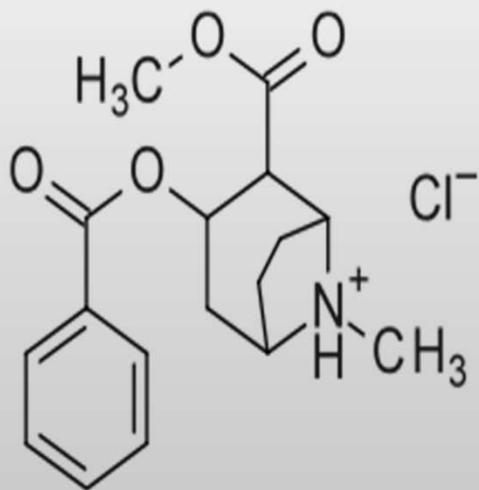
Underground Chemists

- Underground chemists first determine which drugs are listed in the jurisdiction's controlled substance statute.
- "Designer drugs" are homologs, analogs, and/or derivatives of controlled substances.

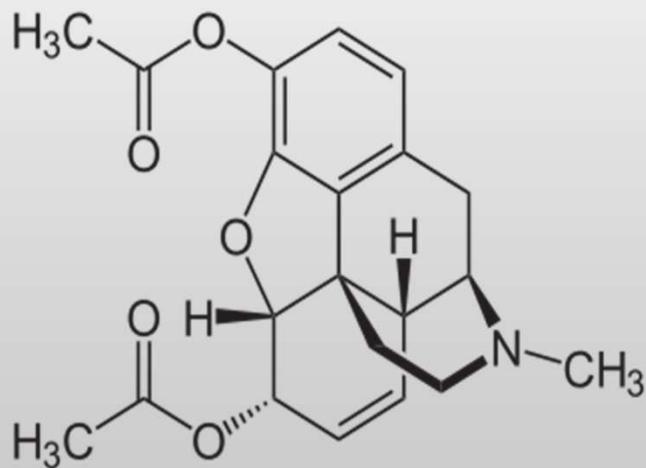


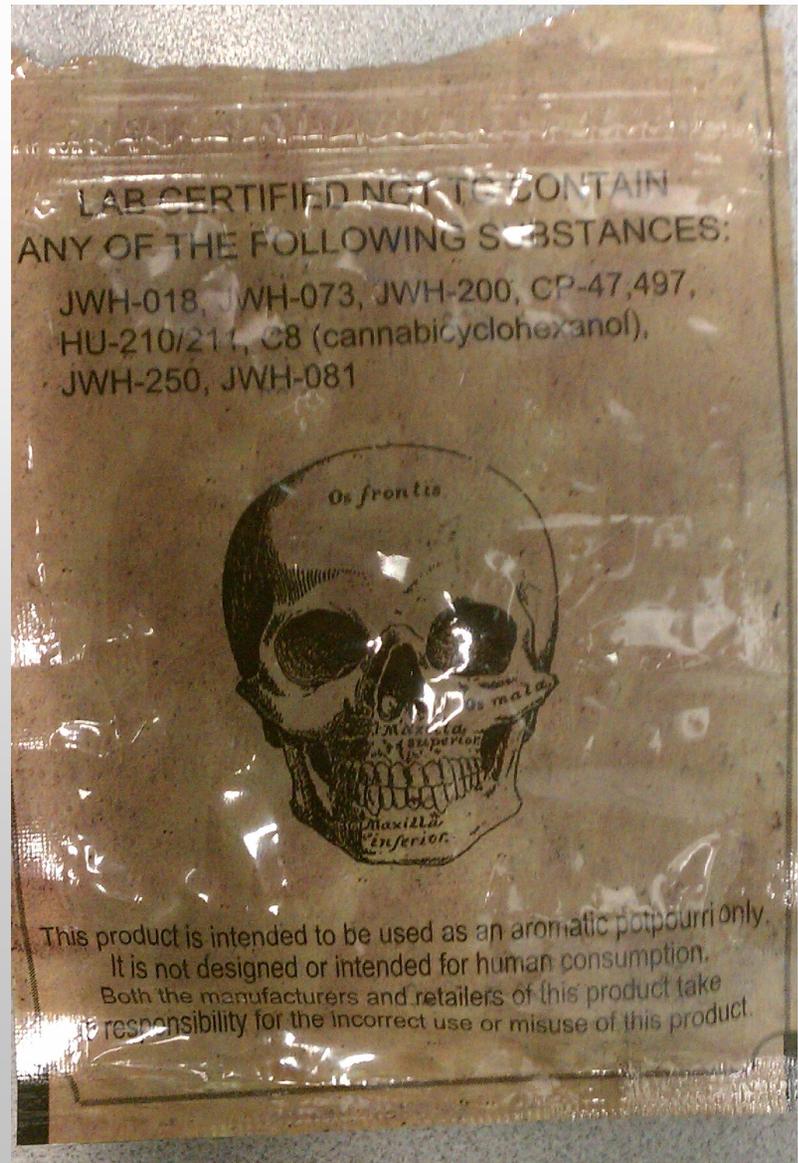
Structural Compounds

Cocaine



Heroin





Bath Salts

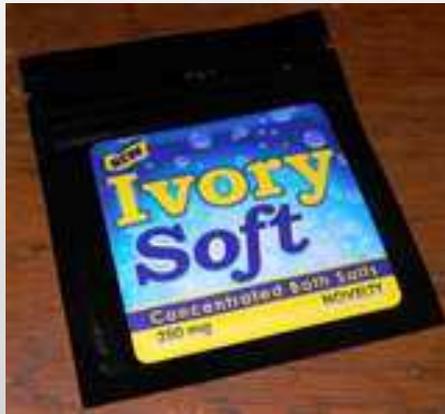
Dangers of Bath Salts

- Abuse of recreational drugs sold as "bath salts" has sent 65 people to hospitals in Michigan over the past six months and caused at least one overdose death, according to a federal report issued May 18, 2011.

What are Bath Salts?

- Synthetic Stimulant, similar to ecstasy, cocaine and/or methamphetamine
- Derived from Cathinone
- “Not for human consumption”
- White, odorless, “pills”, fine-grained powder or crystals (oxidizes to yellow or tan)

Bath Salts a/k/a "K3"



MDPV = Active compound

- Marketed as “**Bath Salts**”
- Chemical analog of Cathinone (Schedule 1 C.S.)
- Dose: 25mg – 500mg
- CNS stimulant (up to 3 days)
 - Delusional
 - Seizures
 - Restless / Irritated
 - Inflammation of heart
 - Teeth Grinding



1 Dose Bath Salts...

DAY 1

- Banging head into wall
- Pulled out IV twice
- Hallucinating, thought security guard drank his beer
- HGN: 2
- Pulse: 112 bpm
- Blood Pressure: 144/94
- Body Temperature: 98.5
- Pupils: 9 – 10 mm in all lighting conditions
- Muscle Tone: Rigid

DAY 2

- Combative
- 12 people to control, injures 1 security guard
- Lorazepam x 3, Haloperidol x1 to control
- Moved to ICU
- Combative again when woke up

DAY 3

- Resting pulse 120
- Exhausted, no memory

Effects

DESIRED

- Euphoria
- Empathy/decreased hostility
- Hallucinations
- Increased insight/self-discovery
- Increased energy
- Enhanced music appreciation

WHAT REALLY HAPPENS

- Restless / irritated
- Delusional / paranoia
- Nose bleeds, headache
- Dilated pupils, blurred vision
- Blue/cold extremities
- Nausea/vomiting
- Seizures, teeth grinding
- Chest pain (inflamed heart)
- Excessive sweating
- **Go to Jail 😊**

MDPV in Michigan-Is There a Problem?

- **February 7, 2011** *Marquette Mining Journal*
Marquette County Health Dept. issues emergency order to remove toxic products marketed as “bath salts” from area shelves.
- **February 9, 2011** *Iron Mountain Daily News*
18 cases related to bath salts in the past four weeks are reported, many of which are in the Marquette area. Users describe being chased by demons, gods, aliens or foreign soldiers.
- **February 15, 2011** *Marquette Mining Journal*
The health dept., in coordination with the Marquette PD and Marquette General Hospital, issues an emergency ban on “bath salts” in Marquette County.

MDPV in Michigan-Is There a Problem?

- **March 26, 2011** *Escanaba Daily News*
Police and health officials removed “bath salts” from the shelves of one local Store which was selling the product.
- **April 21, 2011**
House Bill No. 4565 is introduced which would add, among other things, methylenedioxypropylamphetamine to the list of Schedule I drugs. The bill states the trade and other names as: bath salts, charge plus, cloud nine, hurricane charlie, Ivory wave, mdpv, ocean, red dove, scarface, sonic, white dove, and white lightning.
- **May 18, 2011**
CDC posts report, Emergency Department Visits After Use of a Drug Sold as “Bath Salts” --- Michigan, November 13, 2010—March 31, 2011

MDPV in Michigan-Is There a Problem?

- **May 20, 2011** *Traverse City, Wood TV8*
Abuse of “bath salts” has sent 65 people to hospitals in Michigan over the past 6 months. “I’d never in 22 years in law enforcement seen a drug hit a community and cause so many police-related problems so quickly.” Captain Warchock, Marquette PD.
- **July 21, 2011** *Iron Mountain Daily News*
Officials again remind residents about the dangers of “bath salts”. This is due to a report from the MDCH reporting a surge of cases across the state. Most users are reported to be young adults in their 20s and 30s, but the range is 15-61.
- **August 3, 2011** *Marquette Mining Journal*
AAPCC data indicates 109 toxic “bath salts” exposures so far this year in Michigan. Of those, 51 are from the UP and 27 of those are from Marquette County.

MDPV - Is There a National Problem?
American Association of Poison Control Centers

Year	Number of Calls
2010	304
2011	6,138
2012 As of Jan. 31, 2012	228

2011 by Month	Number of Calls
January 2011	301
February 2011	487
March 2011	639
April 2011	600
May 2011	720
June 2011	743
July 2011	680
August 2011	602
September 2011	512
October 2011	401
November 2011	231
December 2011	222
Total	6,138

Types of Cases

Typical Case:

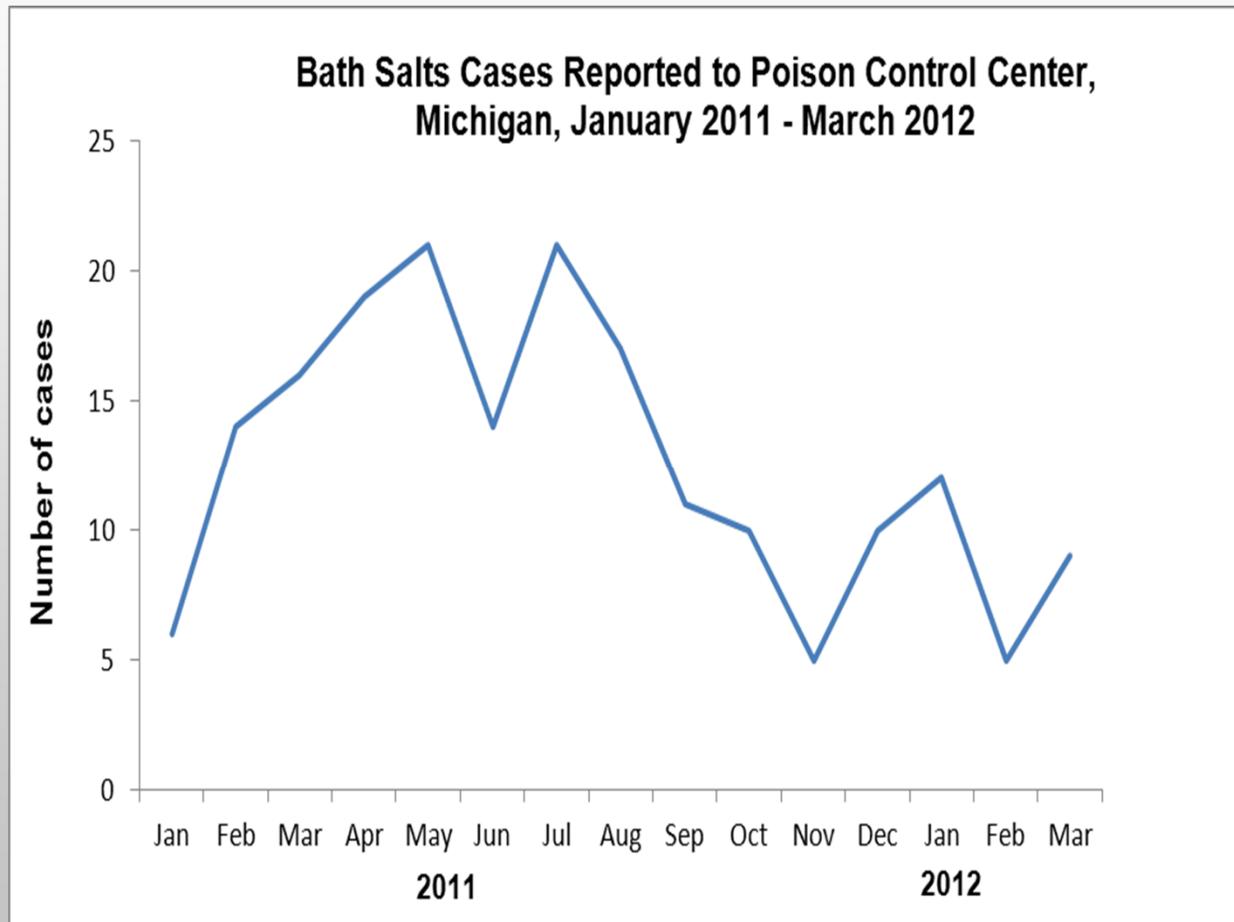
- OWI (reckless or negligent driving)
- Male
- Early 20's to early 30's
- Symptoms: jittery, incoherent, mood swings, sometimes aggressive
- Occasionally: sleepy (binging?)
- Other findings: rx drugs (gabapentin, quetiapine) and THC most common
Occasionally hydrocodone.
Rarely other illicit drugs or alcohol

Atypical Cases:

- Two CSCs
- Aggressive driver ran over a police officer
- Fatal overdose



Reported Bath Salts Cases in Michigan



What about Michigan?

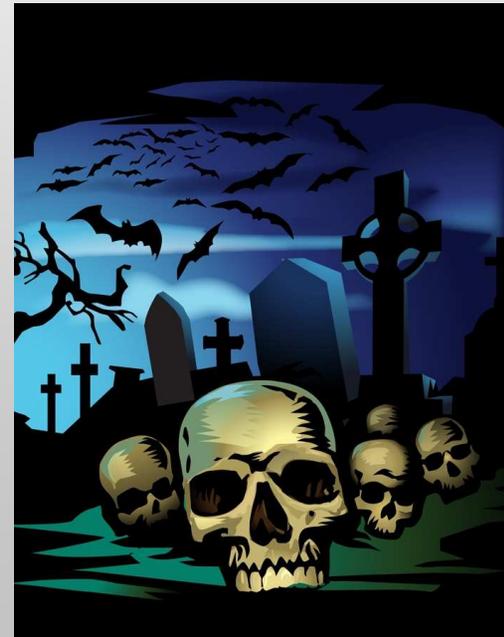
- Effective August 1, Public Act 88, 2011 amends the Public Health Code to include all of the following in the list of Schedule 1 controlled substances:
 - -- Methylenedioxypropylone, also known as Bath Salts, Cloud Nine, Hurricane Charlie, Ivory Wave, MDPV, Ocean, Red Dove, Scarface, Sonic, White Dove, and White Lightning.
 - -- 5,6-Methylenedioxy-2-aminoindane, also known as MDAI, and Woof-Woof.
 - -- Naphyrone (Naphthylpropylone), also known as NRG-1 and Rave.
 - -- Propylone (1-(4-Methylphenyl)-2-(1-pyrrolidinyl)-1-propanone).

Spice/K2

What Drug am I?

APD#10-14949

- Crossed raised median 3 times, hit concrete wall 2x, driving on sidewalk w/ broken axle / tire
- 6HGN + vertical
- .000 BAC
- Hallucinating
- *“Death is all around me”*
- Going to kill Officer



What is SPICE / K2 ?

Dangerous, synthetic research chemicals that have been dissolved in acetone and sprayed onto dried plant material



SPICE/K2

- Plant material
- Marketed as incense
- Laced with various synthetic compounds that behave like THC
- Smoked or mixed in drink or food
- Was sold LEGALLY and LOCALLY
- 1g -3g packages About 2x price of marijuana

Spice/K2



Ingredients: Baybean, Blue Lotus, Lion's Tail, Lousewort, Indian Warrior, Dwarf Scullcap, Maconha Brava, Pink Lotus, Marshmallow, Red Clover, Rose, Siberian Motherwort, Canavalia Maritime, Leonotis Leonurus, Leonurus Sibiricus, Pedicularis Densiflora, Scutellaria Nana, Vanilla Planifolia, Zorinia Latifolia, Magnolia Officinalis, Rosa Gallica, Trifolium



£24.95

SPIKE

LIMITED MALCOLM

Where Did They Come From?

- **JWH- compounds**
 - Developed in U.S. in 1984
 - 4 times as potent as THC
 - Binds to CB1 Receptor 3:1 (THC=CB1, CB2 1:1)
- **HU 210**
 - Hebrew University 1988
 - 100-800x more potent than THC
- **CP47,497**
 - Pfizer
 - 3-28 x more potent than THC



How Many Compounds Now?

Symptoms

Not always a bad trip, but if you're involved it probably is

- Elevated BP (140-210 / 100-110)
- Rapid heart rate (110-150bpm)
 - can be decreased BP / heart rate
- Tremors / Seizures
- Unconsciousness
- Hallucinations / Delusions / Paranoia
- Numbness / Tingling / Muscle Loss

Symptoms

Not always a bad trip, but if you're involved it probably is

- Vomiting
- Memory Loss
- Incoherent/slurred speech
- May feel cold / hot
- Excessive thirst
- 6-8hr high (some effects up to 30hrs)
- Cyclic Symptoms
- Effects vary from use to use and person to person
- “Excited Delirium”
 - No pain
 - No clothes

Death??

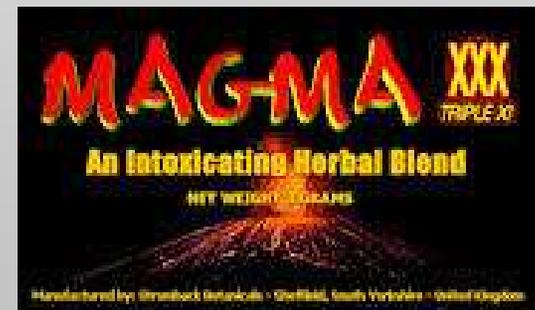
Treatment?

- No antidote
- Symptoms more like Stimulants and Dissociative Anesthetic than Marihuana
- Not detectable on standard screen
- Flush with Fluids (but not too much)



Spice/K2 Law in Michigan

- Effective, October 1, 2010, Spice/K2 is classified as a Schedule 1 Controlled Substance under the Michigan Public Health Code, Michigan Compiled Law 333.7212.
 - CP 47, 497
 - JWH-073
 - HU-210
 - JWH-018
 - JWH-015
 - JWH-200



Charge Code for K2/Spice and Bath Salts-Possession

CONTROLLED SUBSTANCE - POSSESSION/ANALOGUES

did knowingly or intentionally possess (1); contrary to
MCL 333.7403(2)(b)(ii). [333.74032B-A]

(1)Select one: (a) the controlled substance (1).(b) a controlled substance
analogue.

(1)Include a Schedule 1, 2, 3 or 4 drug (except marihuana, LSD, peyote, mescaline,
dimethyltryptamine, psilocyn, psilocybin, or a schedule 1 narcotic drug).

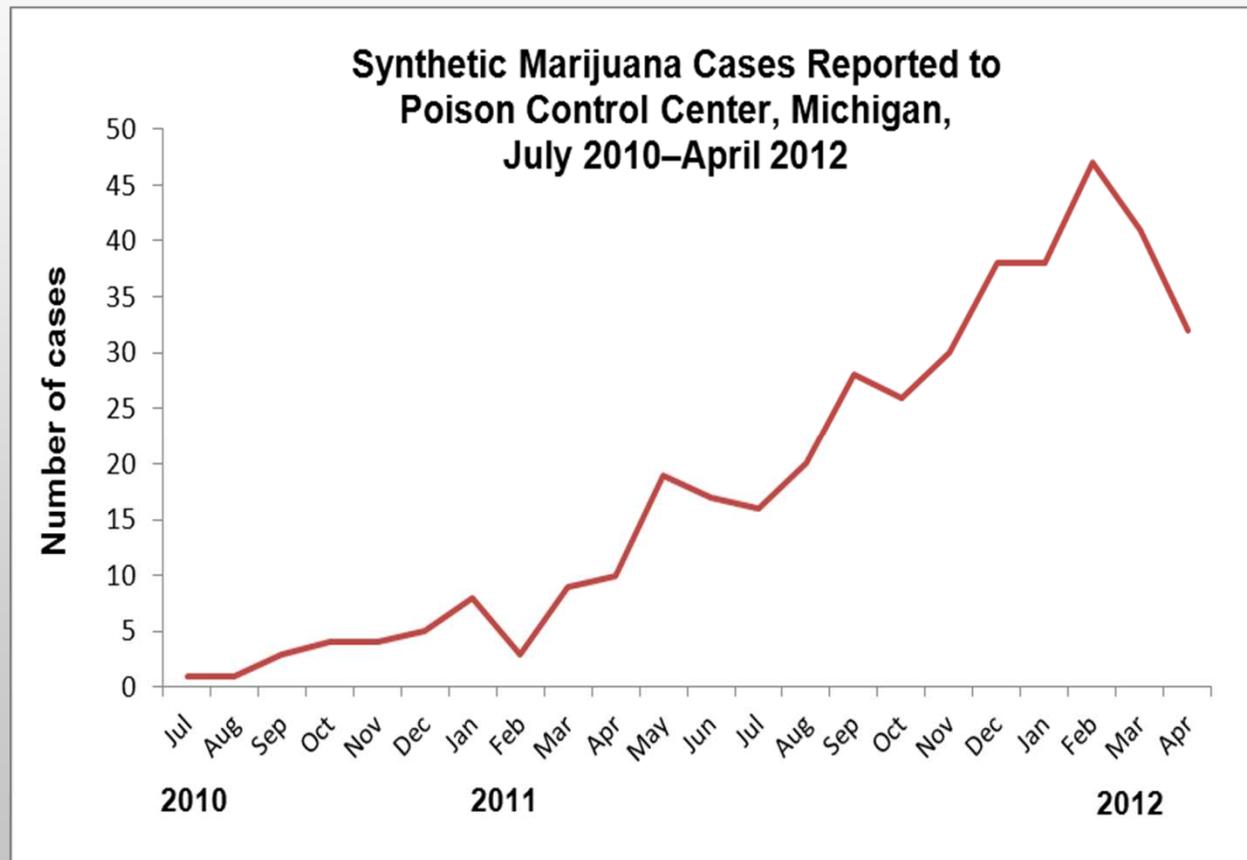
FELONY: 2 Years and/or \$2,000.00. Unless sentenced to more than 1 year in
prison, the court shall impose license sanctions pursuant to MCL 333.7408a.

GROUP:CS

CLASS:G

RESPONSIBILITIES: Printable Adult DNA

Reported Spice/K2 Cases in Michigan



Other Dangerous Drugs

Looming Threats

- Phenethylamines
- Arylcyclohexylamines
- Dimethylamylamine
- Levamisole-Adulterated Cocaine & Heroin
- LSD Analogues
- Cocaine Analogues



Phenethylamines

Substance	Chemical Name
MDMA	3,4-methylenedioxy-N-methylamphetamine
2C-B	2,5-dimethoxy-4-bromophenethylamine
2C-E	2,5-dimethoxy-4-ethylphenethylamine
25I-NBOMe	4-iodo-2,5-dimethoxy-N-(2-methoxybenzyl)phenethylamine
Mescaline	3,4,5-trimethoxyphenethylamine
Bromo Dragonfly	1-(8-bromobenzo[1,2-b;4,5-b']difuran-4-yl) -2-aminopropane

Arylcyclohexylamines

- Originally developed as anesthetics in the 1960s with ketamine and PCP being the first members of the class to be synthesized.
- The 1970s saw the debut of these compounds.
- Since, the class has been expanded by scientific research into stimulant, analgesic, and neuroprotective agents.
- Clandestine chemists in search of novel recreational drugs.

Arylcyclohexylamines

Compound	Aryl Substituent	N Group	Cyclohexyl ring
Phencyclidine (PCP)	Phenyl	Piperidine	-
Rolicyclidine (PCPy)	Phenyl	Pyrrolidine	-
Tenocyclidine (TCP)	2-Thienyl	Piperidine	-

Compound	Aryl Substituent	N Group	Cyclohexyl ring
Ketamine	<i>o</i> -Chlorophenyl	Methylamino	2-Keto
Methoxetamine	<i>m</i> -Methoxyphenyl	Ethylamino	2-Keto
Methoxyketamine	<i>o</i> -Methoxyphenyl	Methylamino	2-Keto
Fluoroketamine	<i>o</i> -Fluorophenyl	Methylamino	2-Keto
Bromoketamine	<i>o</i> -Bromophenyl	Methylamino	2-Keto

Dimethylamylamine (DMAA or “Geranium”)

- Found in 200+ exercise supplements.
- Canada prohibits sale & possession.
- FDA has 42 instances of adverse effects and recently issued a warning memorandum.
- Can narrow blood vessels and increase blood pressure. This can lead to shortness of breath, tightening in the chest, or even heart attack.



Levamisole-Adulterated Cocaine & Heroin

- In 2009, 69% of more of all cocaine and 3% of all heroin seized prior to domestic entry by the DEA tested positive for Levamisole.



Levamisole

- Levamisole is a livestock dewormer that the US government is alleged to have provided to the Columbian government.
- It gives cocaine the "fishscale" appearance, which is an indicator of increased purity.
- Levamisole is a bulking agent for crack. The process of making crack involves "washing" cocaine and filtering out impurities and cutting agents. Levamisole slips through this process, meaning you can produce more volume of crack with less pure cocaine.
- Levamisole passes the "bleach test":
 - When dropped in Clorox, pure cocaine dissolves clearly.
 - Procaine (a common cutting agent) turns reddish brown,
 - Lidocaine turns yellowish.
 - Other impurities float to the bottom.
 - In a lab test conducted by Dr. Clark, levamisole stayed clean and clear.

LSD Analogues

- AL-LAD
 - 6-allyl-6-nor-lysergic acid diethylamide
- ETH-LAD
 - 6-ethyl-6-nor-lysergic acid diethylamide
- LSA
 - d-lysergic acid amide
- PRO-LAD
 - (8 β)- N,N- diethyl- 6-propyl- 9,10- didehydroergoline-8- carboxamide

Cocaine Analogues

- BTQ
 - Butyltolylquinuclidine
- Dimethocaine
- Nocaine
 - 3 α -carbomethoxy-4 β -(4-chlorophenyl)-N-methylpiperidine)

Michigan Senate Bill 1082

- Specifically include **synthetic cannabinoids** within Schedule 1 controlled substances, including:
 - Naphthoylindoles
 - Naphthylmethylindoles
 - JWH-176
 - Phenacetylindoles
 - Cyclohexylphenols
 - Benzotindoles
 - Dibenzopyrans
 - Adamantoylindoles
 - Any other chemical compound that is a cannabinoid receptor and mimics the pharmacological effect of naturally occurring cannabinoids.
- Specifically include **synthetic cathinones**.
- **Effective, July 1, 2012.**



Michigan Senate Bill 1082 (cont.)

- The bill will create a 4 year felony penalty for selling a product that the person knows previously contained an ingredient that was controlled substance and representing that it contains an ingredient that produces the same or substantially similar physiological or psychological effect as the scheduled ingredient.
- Effective, July 1, 2012.



Michigan Senate Bill 789 and Michigan House Bill 5338

- The bills will amend the Public Health Code to do the following:
- The bills authorize the Director of the Department of Community Health (DCH) to issue orders intended to avoid, correct, or remove an imminent danger.
- The term "imminent danger" is defined to mean an existing condition or practice reasonably expected to cause death, disease, or serious physical harm immediately or before the imminence of the danger can be eliminated through enforcement procedures provided.
- The director also is authorized to take full charge of the administration of state and local health laws, rules, regulations, and ordinances upon determining that conditions anywhere in the state constitute a menace to the public health.



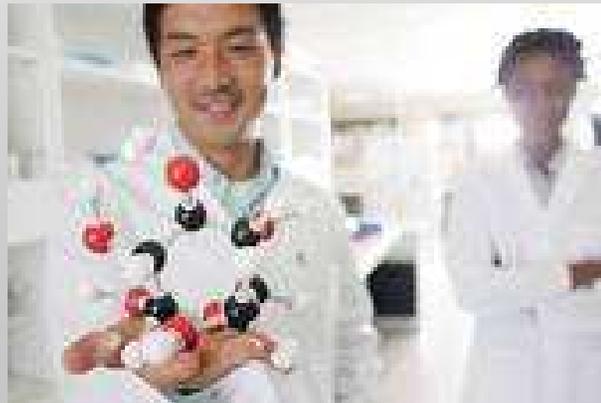
President Obama Signs Synthetic Drug Abuse Prevention Act of 2012

- On May 24, 2012, the United States Senate by a vote of 96-1, passed a ban on the sale of synthetic marijuana.
- Senator Chuck Schumer stated that “This bill closes loopholes that have allowed manufacturers to circumvent local and state bans and ensures that you cannot simply cross state lines to find these deadly synthetic drugs.”
- President Obama signed the bill into law on July 10, 2012.
- The federal ban makes it illegal to sell anywhere in the United States, regardless of local laws.
- The penalty for breaking the ban is up to 20 years in prison for first-time offenders and up to 30 years for repeat offenders.



Michigan State Police Laboratory

- The Michigan State Police Laboratory has the ability to test for both K2/Spice and Bath Salts.



CONCERNS

- The Federal Analogue Act only applies to Schedule 1 and Schedule 2 compounds.
- Preliminary trends indicate that new compounds are analogues of compounds scheduled under 3 – 5.
 - CBP and USPS Inspections have difficulty seizing these substances.
 - State and Local law enforcement have similar difficulties.

Drugged Driving

Alcohol Impaired Driver

- Bloodshot, watery eyes
- Slurred speech
- Strong odor of intoxicants
- Unable to pick the correct number between 12 and 14
- BAC of .08 or higher



Drug Impaired Driver

May be
unknown



Growing Problem

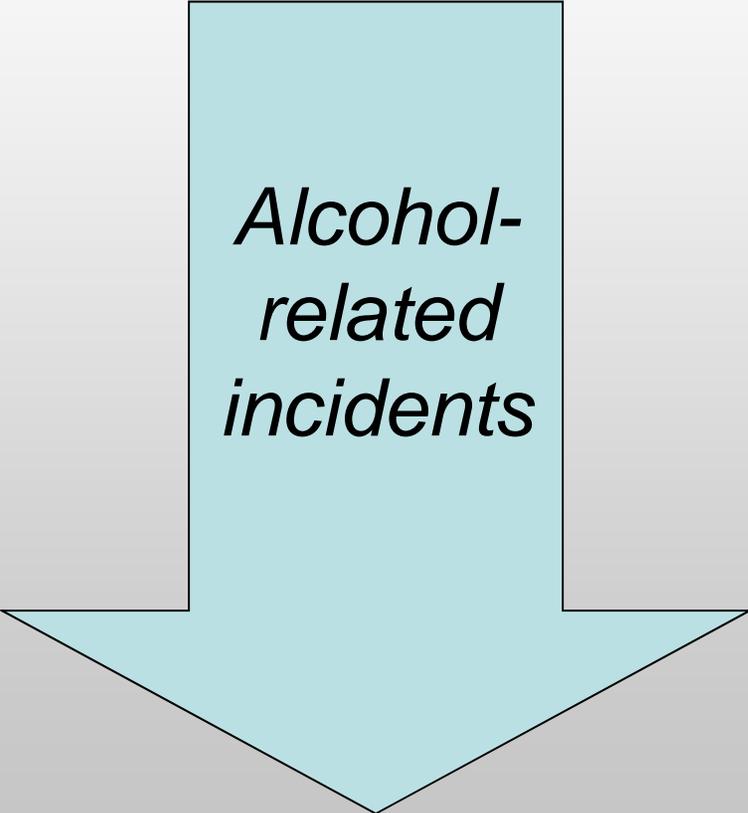
- One in three (33%) of all drivers with known drug-test results who were killed in motor vehicle crashes in 2009 tested positive for drugs (illegal substances as well as medications).
- “Drugged driving is a much bigger public health threat than most people realize.” Gil Kelikowske, Director of National Control Drug Policy.

2007 National Roadside Survey

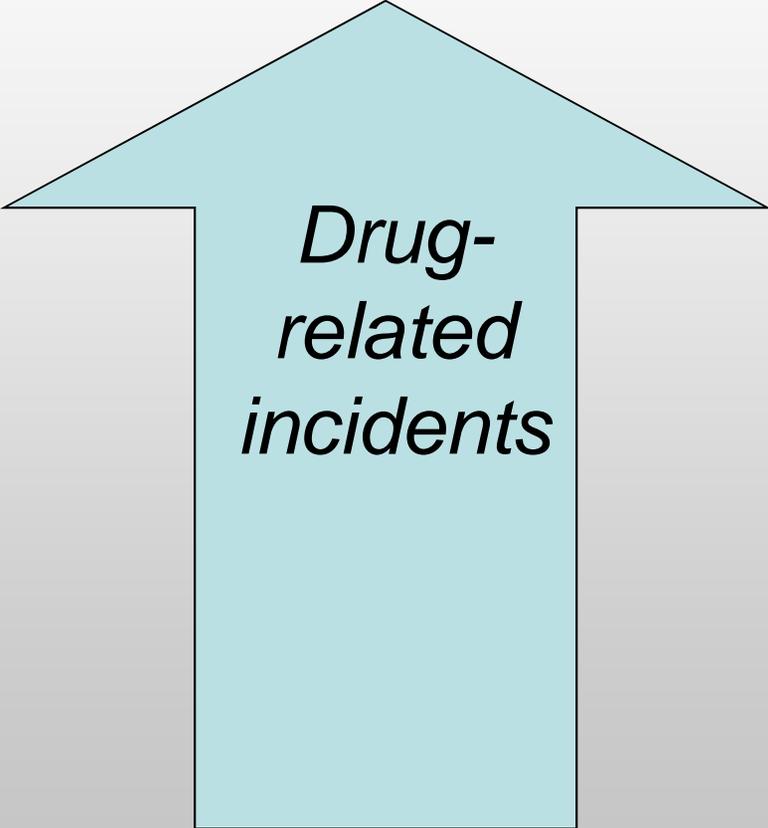
- What about the other 86.2%
 - Prescription and Over-the-Counter
 - Stimulants
 - Sedatives
 - Anti-Depressants
 - Narcotics



Michigan Drugged Driving Issues



*Alcohol-
related
incidents*



*Drug-
related
incidents*

Available Drugs in Michigan

- Marijuana
- B.C. Bud
- Diverted pharmaceutical drugs
- K2/Spice
- Ketamine
- Ambien
- Heroin
- Xanax

NHTSA Impaired Driving Programs

Drug Evaluation & Classification Program



Advanced Roadside Impaired Driving Enforcement



Standardized Field Sobriety Testing

ARIDE-Practical Solution

- Developed by NHTSA with input from the IACP
- Created to address the gap in training between the Standardized Field Sobriety Testing (SFST) and the Drug Evaluation Classification (DEC) Program
- Allows officers to develop advanced skills and knowledge that will assist them in identifying alcohol and drug impaired drivers

ARIDE/DRE in Michigan

- First Michigan ARIDE class June 2009
 - 25 participants (prosecutors and officers)
 - 15 more classes averaging 30 per class
- First Michigan DRE class April 2011
 - 20 participants (prosecutors and officers)
 - 16 DRE officers certified throughout the State

QUESTIONS?

Special Thanks

- Nicholas Fillinger-Michigan State Police Laboratory
- Jennifer Messick-Alaska Traffic Safety Resource Prosecutor
- Amy Miles-Advanced Chemist-Wisconsin State Laboratory of Hygiene
- Marietta, Georgia Police Department
- Jonathan Gonzalez-Michigan Department of Community Health

Thank you!

If you have additional information to contribute, or if you would like to schedule this presentation or get a copy of this Power Point, please contact

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Questions / comments / feedback WELCOMED